



Philadelphia Refinery

**Philadelphia Energy Solutions
Refining and Marketing LLC**
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Philadelphia, PA 19145-5299
215-339-2000

Certified Mail: 7012 1010 0000 7125 7509

July 31, 2013

Director, Air Enforcement Division
Office of Civil Enforcement
U. S. Environmental Protection Agency
Mail Code 2242-A
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460-0001

**RE: USA v. Sunoco, Inc. et. al. - Civil Action No. 05 CV-02866
Philadelphia Energy Solutions Refining and Marketing LLC
Philadelphia Refinery**

Dear Sirs:

Pursuant to Paragraph #114 of the Consent Decree entered in the above noted Civil Action, enclosed is Philadelphia Energy Solutions Refining and Marketing LLC's (PESRM) semi-annual progress report, the fifteenth report for this facility and the first under full PESRM ownership.

On September 8, 2012, PESRM acquired the Philadelphia Refinery Property from Sunoco. On August 17, 2012, a Fourth Amendment to the CD was lodged in the US District Court for the Eastern District of Pennsylvania requiring the transfer of all provisions of the CD as they apply to the Philadelphia Refinery to PESRM as of the Date of Entry. The Fourth Amendment was entered on April 18, 2013.

Should you have any questions concerning the enclosed report, please contact me at 215-339-2074.

Sincerely,

A handwritten signature in black ink, appearing to read 'Charles D. Barksdale Jr.'.

Charles D. Barksdale Jr.
Philadelphia Energy Solutions Refining and Marketing LLC
Site Environmental Director

July 31, 2013
Director, Air Enforcement Division
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RE: USA v. Sunoco, Inc. et. al. - Civil Action No. 05 CV-02866
Philadelphia Energy Solutions Refining and Marketing LLC
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I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my directions and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Signed: _____


James A. Keeler

Philadelphia Energy Solutions Refining and Marketing LLC
VP and General Manager

Date: _____

7/31/13

Facility: Philadelphia

Report Title: Semi-annual Consent Decree Compliance Report #15/#1 (PES)

Reporting Period: 01/01/13 – 6/30/13

Paragraph 114 Reporting and Recordkeeping of Affirmative Relief / Environmental Projects and Emission Data in Section V with Certification

I. Progress Report for Implementation of (section V) Affirmative Relief/Environmental Projects

A. NOx Emissions Reductions from the FCCU

Paragraphs 12 – 13: There were no NOx exceedances of the CD limits during the period. As discussed in previous updates submitted in accordance with the amended CD (via email), Sunoco used Low NOx Combustion Promoter at the 868 FCCU for the first time on April 28, 2011 and the first time the Low NOx Combustion Promoter was added after the Date of Lodging of the Second Amendment was July 15, 2011. Quarterly email updates on the impact of the Low NOx Combustion Promoter were provided to the agencies. On February 18, 2013, PES submitted the final report on the 18 month study required by the Second Amendment. As part of that report and as required by the Second Amendment, PES established new NOx limits that were immediately effective:

7 day average: 100 ppmvd NOx (corrected to 0% oxygen)

365 day average: 50 ppmvd (corrected to 0% oxygen)

No exceedances of the 7 day average limit occurred since the establishment of the limit. Compliance against the 365 day average limit will first be determined after 365 days, starting on February 19, 2014.

B. SO2 Emissions Reductions from the FCCU

Paragraphs 14 – 15: The Philadelphia Refinery is compliant with the requirements of these paragraphs. There were no SO₂ exceedances of the CD limits during the period.

C. Control of PM Emissions from FCCU

Paragraph 16 – The Philadelphia Refinery is compliant with the requirements of this paragraph.

D. Control of CO Emissions from FCCU

Paragraph 19 – There were no consent decree CO exceptions noted during the reporting period pursuant to paragraph 19. However, the 54 lbs/hour limit was exceeded for one hour (each day) on January 9, 2013, May 15, 2013, June 5, 2013 and June 9, 2013 from minor unit upsets.

Paragraph 20 – Philadelphia Refinery is compliant with the requirements of this paragraph.

E. NSPS Subparts A and J Applicability at FCCU Regenerators

Paragraphs 24 – 25: There were no Subpart A or J exceptions during the reporting period. However, one separate emergency shutdowns of the 868 FCCU occurred during the reporting period that led to elevated opacity. On January 9, 2013 during a planned emergency shutdown, elevated opacity in excess of 30% occurred for 19 minutes during the 9 PM hour (over the one minute allowed). The opacity was also elevated and above permit limit for the 8 PM hour but no minutes over 30% opacity occurred.

F. NO_x Emission Reductions from Heaters and Boilers

Paragraph 31– On September 8, 2012, Philadelphia Energy Solutions (PES) acquired the Philadelphia Refinery Property from Sunoco. On August 17, 2012, a Fourth Amendment to the CD was lodged in the US District Court For The Eastern District Of Pennsylvania requiring the transfer of all provisions of the CD as they apply to the Philadelphia Refinery to PES as of the Date of Entry (April 13, 2013). This amendment will allow temporary backup operation of Boiler # 38 until August 31, 2014. All other works relative to the heater/boiler NO_x requirements has been completed. PES has not operated Boiler #38 and at this point will likely not operate it.

G. SO₂ Emissions Reductions from and NSPS Applicability for Heaters and Boilers

On December, 31, 2010, all refinery heaters and boilers became subject to NSPS J. Sunoco submitted a plan approval application to Philadelphia Air Management Services to incorporate these limits into a permit. A draft of this permit was received in July, 2011 and a final permit was received September 23, 2011.

Paragraphs 36 – 38: In accordance with the Consent Decree Appendix D, all remaining refinery heaters and boilers became subject to NSPS Subpart J. On March 30, 2013, an upset of the amine regenerator system led to a one hour exceedance of the NSPS J limit for the 1332 H-2 Heater.

All RICE equipments listed in paragraph 38A of the amended Consent Decree were either permanently removed or replaced with equivalent electrical engine by December 31, 2011.

I. Sulfur Recovery Plants - NSPS Applicability

Paragraphs 40 – 47: The Philadelphia Refinery is compliant with the requirements of these paragraphs.

J. Hydrocarbon Flaring Devices

Paragraphs 48 – 50: The following is a summary of options the Philadelphia Refinery has elected to comply with regarding the CD NSPS requirements for flares.

Philadelphia Flares	Compliance Status
PB North Yard LPG Flare	NSPS. Have an approved AMP. Please note that a request to revise this approved AMP was submitted to USEPA and approved by them in April, 2010.
PB South Yard North Flare	NSPS. Operating and maintain a flare gas recovery system.
PB 867 Acid Gas Flare	NSPS. This is not currently a fuel gas combustion device. The purge and pilot gas is normally comprised of purchased natural gas. The purge and pilot gas can occasionally be refinery fuel gas, and during that time, that gas will be monitored to be compliant with Subpart J. The flare only receives non-routinely generated gases; process upset gases, fuel gas released as a result of relief valve leakage or gases released due to other emergency malfunctions.
PB 867 SWS Gas Flare	NSPS. This is not currently a fuel gas combustion device. The purge and pilot gas is normally comprised of purchased natural gas. The purge and pilot gas can occasionally be refinery fuel gas, and during that time, that gas will be monitored to be compliant with Subpart J. The flare only receives non-routinely generated gases, process upset gases, fuel gas released as a result of relief valve leakage or gases released due to other emergency malfunctions.
GP 1231/1232 Flares	NSPS status began 12/31/2010. AMP submitted in July, 2010 and approved by EPA in June, 2011.
GP 433 Flare	NSPS status began 12/31/2010. AMP submitted in July, 2010 and approved by EPA in June, 2011.

K. Control of Acid Gas Flaring and Tail Gas Incidents

Paragraphs 51 – 63: Acid gas flaring computational methods have been in place since the DOE. There were no AG flaring events to note for this reporting period.

L. Control of Hydrocarbon Flaring Incidents

Paragraph 64: No Hydrocarbon Flaring Incidents occurred during this reporting period.

M. Benzene Waste NESHAP Program Enhancements

Paragraphs 65-77

1. **The following BWON training was conducted over this semi-annual period: (a) Site BWON Coordinator received annual training on sampling and analysis procedures; (b) Environmental Coop was trained on proper BWON sampling methods and procedures and passed our internal test; and (c) Three contractor employees (TEAM) were trained on how to perform Method 21 testing of vacuum trucks.**
2. **The BWON exempted quantity was calculated to be, based on EOL sampling data, 0.12 MG for the first quarter and 0.02 MG for the second quarter of 2013. The projected 2013 annual BWON exempted quantity, based on EOL sampling is calculated to be 0.28 MG. See Appendix II for EOL sampling results.**
3. **A revised BWON EOL Sampling Plan for the Philadelphia Refinery was submitted on December 30, 2008. This revised sampling plan was approved by the EPA on 01/22/09, which resulted in relocating end-of-line sampling point GP EOL-001 and adding sample point GP EOL-006.**

N. Leak Detection and Repair Program Enhancements

Paragraphs 78 – 92: The Philadelphia Refinery is compliant with the requirements of these paragraphs.

The Philadelphia Refinery did not fully meet the requirements for paragraph 85. Six valves did not receive a first attempt at repair within one calendar day on valves that had a reading greater than 200 ppm of VOCs and that LDAR personnel are authorized to repair.

No audits were conducted pursuant to Paragraph 80 during the reporting period.

The fourth LDAR third party compliance audit was conducted October 14-17, 2012 pursuant to Paragraph 80. See Appendix I for a description of corrective actions taken in response to that audit.

Information required under Paragraph 92(c) will be submitted in the first semiannual report of 2013 under 40 CFR 63.654.

O. Incorporation of Consent Decree Requirements into Federally Enforceable Permit(s)

Paragraphs 93 – 96: The Philadelphia Refinery is compliant with the requirements of these paragraphs. Please note that in March, 2011, the Refinery submitted a plan approval application to incorporate NSPS J requirements on all remaining refinery heaters, boilers and flares. A final permit was received from AMS on September 23, 2011. New permit limits for the 1232 FCCU required by the second CD amendment were incorporated into a draft plan approval that was issued as final by Philadelphia AMS on July 30, 2012.

Paragraph 99A (added as part of 4th Amendment): The Philadelphia Refinery is compliant with the requirements of this paragraph.

Paragraph 113A Fenceline Monitoring (added as part of 4th Amendment) – work has begun on interviewing potential consultants to prepare the Fenceline Monitoring Plan that must be submitted to EPA and AMS by April 12, 2014 (360 days from Date of Entry of 4th Amendment).

II. Summary of (section V) Emissions Data

Included herein.

III. Description of Any Problems Anticipated with Meeting (section V) Requirements

None

IV. Additional Matters to be Brought to the Attention of EPA and the Appropriate Plaintiff/Intervenor

None

Paragraph 112 SUPPLEMENTAL AND COMMUNITY ENVIRONMENTAL PROJECTS (SCEP) AND STATE AND LOCAL ENVIRONMENTALLY BENEFICIAL PROJECTS (SLEBP) in Section VIII with Certification

I. Progress Report for Each SCEP or SLEBP (section VIII)

Paragraph 104: All required work was completed during the second half of 2011 and the SCR unit for the H-400 and H-401 heaters was in service on December 30, 2010. Some minor work post construction punch list work was completed in the first half of 2011 and some minor touch up painting was completed in the third quarter of 2011.

Paragraph 105: Completed

Paragraph 106: Completed

Paragraph 107: Completed

Paragraph 108: Completed

Paragraph 109: Completed

Paragraph 110: A cost report for the SCR unit for the H-400 and H-401 heaters was submitted in January 2012.

II. Completed SCEP or SLEBP (section VIII)

A. Detailed Description of Each SCEP or SLEBP Project as Implemented

None

B. Brief Description of Any Significant Operating Problems Encountered

None

C. Certification That Each Project Has Been Fully Implemented Pursuant to the Provisions of this Consent Decree

If applicable, see the certification behind the cover letter.

D. Description of the Environmental and Public Health Benefits Resulting From Implementation of Each Project (including quantification of the benefits and pollutant reductions, where practicable)

N/A

APPENDIX I

RESPONSES AND CORRECTIVE ACTIONS TO THE THIRD PARTY LDAR COMPLIANCE AUDIT FINDINGS DATED OCTOBER 18, 2012 FOR THE PHILADELPHIA REFINERY ARE LISTED BELOW:

Finding #1. Twenty-two (22) open-ended lines were observed during the field walkthroughs of the refinery's process units.

All identified open-ended lines have been corrected. Annual LDAR awareness training will be updated to include identification of open-ended lines that results from not having a double block in place. Routine OEL audits are conducted in the facility by both monitoring technicians and facility personnel.

Finding #2. One (1) open-ended line was observed during the field walkthrough of the refinery's process unit applicable to Subpart GGGa.

The identified open-ended line has been corrected. Annual LDAR awareness training will be updated to include identification of open-ended lines that results from not having a double block in place. Routine OEL audits are conducted in the facility by both monitoring technicians and facility personnel.

Finding #3. Three (3) valves found not identified in the facility's Leak Detection and Repair program during unit walkthroughs of the process units. The refinery confirmed that these valves were in non-heavy liquid, VOC service.

New valves are added to the LDAR program through the Management of Change (MOC) Process. Annual LDAR awareness training will be updated with the requirement to notify the LDAR co-coordinator of any new valves via the MOC process. In addition, the facility has an LDAR technician who performs P&ID audits to ensure compliance.

Finding #4. Records indicated that post repair monitoring of eleven (11) repaired valves was not consistently conducted for two successive months following repair.

The eleven repaired valves were monitored one month following repair and not the required two months. The facility utilizes the LeakDAS database to schedule post repair monitoring. The facility data processor routinely checks components to ensure the correct rule sets are applied so that component requirements can be followed.

Finding #5. There were forty-eight (48) instances when monitoring was conducted in the 859 Unit when the refinery conducted the calibration drift assessment requirement at the end of each monitoring day only using one meter reading (in accordance with its Consent Decree) rather than taking three (3) readings and using the average.

Retraining on the 859 unit daily calibration requirement was conducted for all monitoring technicians. Technicians have also implemented a tagging system for any instrument that has been used in the 859 unit. All tagged instruments have three readings performed at the end of day drift assessment. The 859 unit calibrations are checked daily by the monitoring supervisor and audited routinely by the data processor and the facility LDAR coordinator.

Finding #6. Analysis of 526,482 historical monitoring events from October 1, 2010 to October 12, 2012 identified 342 potential monitoring anomalies. Of this total, four technicians responsible for

40% of the historical monitoring vents were associated with 246 instances where the time between monitoring events was insufficient to locate and survey a component based on the component size and flame ionization device response time; or the time required for the technician to move to the next component. For example, a 12-inch valve was monitored in 3 seconds, which is less than observed response times measured by the facility and is equivalent to a survey speed of 18.8 inches per second.

M21 training is conducted annually for technicians. A minimum response time based on component size, has been programmed into technicians handhelds which will not allow advancement to the next component until the current component has at least been monitored for the minimum response time. In addition, GPS units have been installed on handhelds which track technician location for each monitored component.

Finding #7. An analysis of historical monitoring data identified forty-five (45) instances where a technician set the background concentration of his monitoring instrument higher than the repair action level defined in the CD or high enough above normal background (i.e. greater than 10 ppm), such that the resulting net concentration, measured (after subtracting that background concentration) was less than the repair action level. As a result, these components were not identified as requiring a repair attempt.

Technicians were provided retraining which included a review of allowable background concentrations and the process of letting an instrument zero out after finding a leak before moving on to other components.

Finding #8. There were two (2) days when an end-of-shift calibration drift assessment for an instrument was documented as failing in the calibration records and valves and pumps were measured at greater than 100 and 500 ppmv and were not re-monitored during the scheduled monitoring month.

Technicians were provided retraining which included reporting failed drifts have are reported the monitoring supervisor and data processor. The Data processor then checks if any reading greater than 100ppm for valves and 500ppm for pumps were found that day. If there are readings found they are monitored the following business day.

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Sample Point ID	Sample Date	Benzene Conc (ppmw)	Avg 1 st Qtr 2013 Benzene Conc. (ppmw)	Avg 2 nd Qtr 2013 Benzene Conc. (ppmw)	1 st Qtr 2013 Flow (gal)	2 nd Qtr 2013 Flow (gal)	1 st Qtr 2013 Benzene Quantity (Megagrams)	2 nd Qtr 2013 Benzene Quantity (Megagrams)
231 Groundwater (GP EOL 003)	01/2013	*No sample	*0		*0		*0	*0
	02/2013	*No sample						
	03/2013	*No sample						
	04/2013	*No sample		*0		*0		
	05/2013	*No sample						
	06/2013	*No sample						
* Groundwater system not operational at the time of sampling.								
#3 Separator Effluent (GP EOL 004)	01/14/13	0.00099	0.03		3150000		0.0004	0.002
	02/12/13	0.00099						
	03/19/13	0.1						
	04/09/13	0.56		0.2		3150000		
	05/22/13	0.035						
	06/11/13	0.00099						
8 Separator Effluent (GP EOL 005)	01/14/13	0.029	0.02		8300000		0.0006	0.0006
	02/13/13	0.009						
	03/19/13	0.009						
	04/09/13	0.00099		0.02		8300000		
	05/22/13	0.041						
	06/11/13	0.005						
15 Pumphouse (PB Non-EOL 001)	01/14/13	0.00099	0.002		15000		0.0000001	0.000002
	02/12/13	0.004						
	03/19/13	0.00099						
	04/09/13	0.072		0.03		15000		
	05/22/13	0.011						
	06/11/13	0.003						

Sample Point ID	Sample Date	Benzene Conc (ppmw)	Avg 1 st Qtr 2013 Benzene Conc. (ppmw)	Avg 2 nd Qtr 2013 Benzene Conc. (ppmw)	1 st Qtr 2013 Flow (gal)	2 nd Qtr 2013 Flow (gal)	1 st Qtr 2013 Benzene Quantity (Megagrams)	2 nd Qtr 2013 Benzene Quantity (Megagrams)
1232 Sewer M Street (GP EOL 006)	01/15/13	0.018	0.05		4700000		0.0009	0.0007
	02/14/13	0.009						
	03/21/13	0.11						
	04/10/13	0.068		0.04		4700000		
	05/24/13	0.048						
	06/12/13	0.012						
V-4 Hydrobon Separator Condensate Wash (GP Non-EOL 001)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
No waste was generated from this Non-EOL point during the semi-annual period.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
V-603 Debutanizer Receiver Condensate Wash (GP Non-EOL 002)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
No waste was generated from this Non-EOL point during the semi-annual period.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

1st Qtr 2013 EOL Sampling TAB = 0.12 Megagrams

2nd Qtr 2013 EOL Sampling TAB = 0.02 Megagrams

Projected annual 2013 EOL sampling TAB = 0.28 Megagrams

Notes:

1. Benzene concentrations listed as 0.00099 ppm were reported by the laboratory as < 0.001 ppm which is the detection limit.

2. *Average quarterly benzene concentrations are simply the arithmetic mean of the individual laboratory results for the quarter.*

3. Sample calculation of 1st Qtr Benzene Quantity for GP EOL 002:

1st Qtr avg benzene conc. = 3.4 ppm

1st Qtr flow = 3,450,000 gallons

So: $\frac{3.4 \text{ ppm benzene} \times 3,450,000 \text{ gallons} \times 8.34 \text{ lbs/gallon}}{2204.6 \text{ lbs/megagram} \times 1,000,000 \text{ parts per million}} = 0.04 \text{ Megagrams}$